

17.

On the Species of *Otus scops*.

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Owls have long been considered among the most difficult birds to understand, particularly in regard to systematics. Their secretive ways have made it difficult to collect suitable series, while the numerous plumage phases within the same form are often extremely puzzling.

Among them, none are more confusing than those of the genus *Otus*, an ubiquitous group containing the small species known as "Scops owls" in Europe, and "Screech owls" in America. This could, of course, be expected, since nocturnal habits, color and geographical variations are exhibited in the extreme among them.

As early as 1875, Sharpe, in the Catalogue of Birds in the British Museum (Vol. II. p. 44), wrote: "Difficult to understand as all owls are, the species of the genus *Scops*¹ are in every way the most difficult to identify. The impossibility of procuring series of some of the species to study at the same time; the absence of information as to the sequence of plumages from the young stage to that of the adult, and the puzzling way in which some species seem to possess rufous phases, while others do not—these are all problems that only time can solve."

Time has certainly brought us a wider knowledge, but the classification of the Scops owls still leaves much to be desired. Authors differ widely, even today, as to the relationships and affinities of many forms. Particularly those of the smallest birds, related to the European Scops, seem to have remained in a state of confusion. The present paper is an attempt to clear it up as much as possible.

The small Scops owls, resembling *Otus scops scops*, are widely distributed in Europe, Asia, Africa and, curiously enough, are represented in western North and Central America. They are absent from South America, the Malay and Australasian Islands. To the unprejudiced student, these birds are all obviously so closely related that it is impossible to consider them but as mere subspecies of one species, since it is well known that none of them breed on the same ground. Whenever two forms have been found

together, one has always proved to be a winter migrant.

Scops owls, like many other avian types, are more or less migratory, according to distribution. The species is a dweller in temperate or tropical climates. Nowhere is it found far to the north. In the cooler regions of Europe, Asia and even perhaps northwestern America, it is only a summer nesting visitor, migrating south as soon as the temperature becomes too low. Elsewhere, it does not wander much. It is found at both low and high altitudes, to the latter of which a few forms seem to be confined. As can be expected, the migratory forms have longer and more pointed wings than the resident races.

Two facts have contributed to the obscuration of the status of these owls: first, the presence of different gray, brown and red color phases and their intermediates, which formerly caused much confusion but are now better understood; second, the unfortunate method of classifying them according to the wing formula, which has induced authors to consider as different species birds really hardly separated subspecifically. The relative length of primaries is a late-acquired and relatively unimportant character; a more careful study shows that it is even quite variable in many forms. It certainly cannot stand as of specific value. The figures of wing contours, found in the course of this study, show some of the more typical formulas in different forms. But they represent only one or two of the more frequent formulas. In almost all subspecies there are numerous and important variations.

It has been the mistake of many ornithologists of the last century to base generic and specific distinctions on easy, but often unimportant, characteristics such as wing formula, number of rectrices, etc. When undertaking a general study of the more difficult groups of birds, one is astounded to find that forms so closely related as to be obvious geographical races of the same species often are still widely separated in standard works. Unless a serious revision, based on actual series of specimens, be made, students certainly may be excused for not suspecting affinities which the literature does not suggest.

¹ Now called *Otus*.

Such is the case of our Scops owls. In the Catalogue of Birds in the British Museum, Vol. II, 1875, cited above, Sharpe made excellent use of the materials and of information available in those days. Particularly he states (pp. 45 and 106) that *Scops flammeolus* is the American representative of *Scops giu* (*Otus scops scops*) and that many forms should be considered as races of the European bird. He believes that *Scops senegalensis* is conspecific with *Scops giu*, being "indistinguishable in color," and only smaller (pp. 51-52). He calls subspecies the following forms: *capensis* (*senegalensis*), *pennatus* (*sunia*), *stictonotus*, *japonicus*, *malayanus* and *rufipennis*. Further on (pp. 100-102) he recognizes that the two Andaman Scops owls, *balli* and *modestus*, belong to two different species, all of which is correct. In time, ornithologists arbitrarily came to separate specifically different forms on the basis of the wing formula.

In the last published general list, J. L. Peters (Birds of the World, Vol. IV, 1940) rightly considers all Asiatic forms as subspecies of *Otus scops*, stating in a footnote: "Some authorities consider the Scops owls of Eastern and South Eastern Asia as specifically distinct by reason of their wing formula; other things considered, this difference hardly seems grounds for specific distinctness." But he fails to recognize as such the African and American birds, although they are barely distinguishable in shape, color and wing formula.

My attention was called to the unsatisfactory arrangement of these owls when H. Friedmann & H. G. Deignan (*Journal of the Washington Academy of Sciences*, 20, No. 7, July 15, 1939, pp. 287-291) described a new race, *distans*, from two Siamese specimens, as a subspecies of *Otus senegalensis* to which it is truly very similar. That all the more sedentary tropical forms of Scops, small and round-winged, are very closely related cannot be denied, and the new *distans*, later on also found in South Annam, is curiously similar to the Angolan *hendersoni*, as was pointed out. But it is not very different either from the Indian *sunia*, particularly in its recently discovered extreme red phase, never found among African birds. The same *sunia* in its gray phase also closely resembles *senegalensis* from north-western Africa. It did not, therefore, seem acceptable to consider *distans* as a subspecies of *senegalensis* while *sunia* and other Asiatic forms were left within the species *scops*. Another interpretation had to be found.

The study of materials now at my disposition in America has led me to the following conclusions:

All the small Scops owls of Europe, Asia and western North and Central America, must be considered as geographical representatives—that is to say, as subspecies—of the species *Otus scops*. Differences in size, wing formula and coloration remain well within the normal range of racial variations, the northern migratory birds being duller and having longer and more pointed wings than the more sedentary tropical ones.

None of the different Scops owls of this group breed in the same territory, and wherever they meet, it is only on the winter grounds of northern migrants. All these owls have similar habits, behavior and voice, varying only in a minor degree.

The position of *Otus brucei*, from western Asia, is somewhat peculiar. It looks rather like a pale gray, lightly marked desert edition of *Otus scops*. However, it occupies large areas where the latter also lives and breeds. On close examination it proves to have longer tarsus and tail, and, according to Cheesman, its voice is completely different. No intermediates between these two Scops seem ever to have been found. It must be regarded as a different species. (See Dementiev, Syst. Av. Ross., Paris, 1935, p. 50.)

Otus balli, from the Andaman Islands, where *O. s. modestus* also is found, stands as a separate species, being a larger, heavier bird, with a different color pattern. The very rare *Otus leucopsis* from S. Thomé appears also to be a good species. The small Scops owls of the *rutilus*, *umbra*, *manadensis* and *spilocephalus* groups constitute also as many species, for the same reason. Furthermore, several races of *O. spilocephalus* live on the same grounds as *O. scops*.

I cannot decide whether or not the Philippine forms of Scops owls, as admitted by Peters, really belong to the species *Otus scops* (*calayensis*, *longicornis*, *mindorensis*, *romblonis*, *cuyensis*). I could examine only two specimens of the latter, which seems to be too different in size and color pattern to be included, none of the others having been available. The same can be said of *mantananensis*, from Mantanani Island, north of Borneo. In his "Birds of the Philippine Islands" (London, 1934), Marquess Hachisuka does not consider any of the Philippine Scops owls as closely related to *Otus scops*.

As none of the types and series preserved in European collections can at present be examined, I find it impossible to proceed now to a complete revision of the species *Otus scops*. I can only attempt here to establish a tentative list of its forms, leaving to the future further considerations and appreciations as to the validity of several subspecies. In such cases, I have provisionally accepted Peter's conclusions in his "Birds of the World."

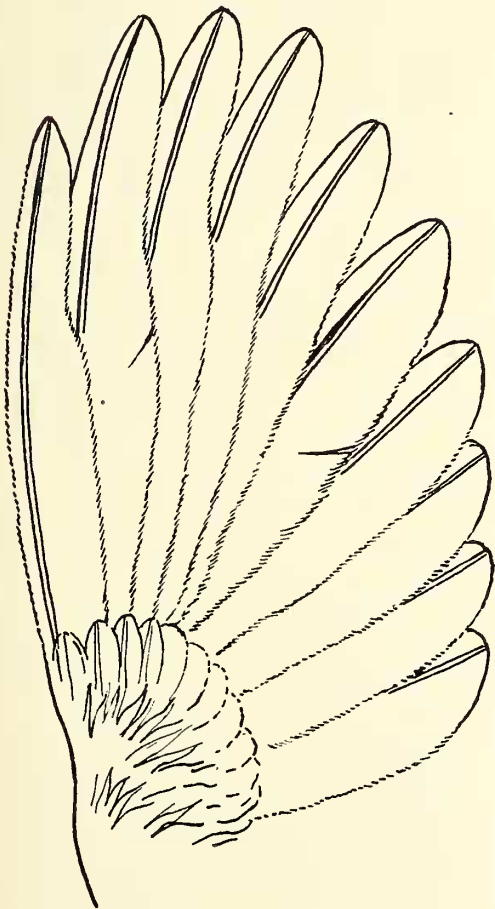
I am simply giving for each form its geographical distribution, formula and dimensions of wings, while stressing interesting points on color phases and plumages from actual examination and also from literature whenever necessary. For general descriptions of the species, I refer my readers to those of *Otus scops scops* easily found in standard works, which can be used for comparison with other subspecies.

All forms of *Otus scops* have the tarsus feathered to the base of the toes, except in a few cases which are mentioned below. Their eyes are usually yellow, but in some forms they vary to brown (*sunia* and allies), while in others they are always dark (*flammeolus*).

In the present study, I have been greatly helped by my friends Dr. J. Chapin, Dr. E. Mayr and Mr. J. Zimmer, of the American Museum of Natural History, New York; Dr. H. Friedmann and Mr. H. G. Deignan, of the National Museum, Washington; Mr. R. M. de Schauensee, of the Academy of Natural Sciences, Philadelphia; and Mr. J. C. Greenway, of the Museum of Comparative Zoology, Cambridge, who kindly loaned me the specimens in their care.

I have made particular use of the valuable information found in the more recent works by Hartert, Mr. W. L. Sclater, Mr. E. C. Stuart Baker, Dr. D. A. Bannerman, Dr. J. Chapin, and I am much indebted to the researches of Dr. E. Stresemann (*Mitt. Zool. Mus. Berlin*, 12 (1) 1925, pp. 191-195); Dr. P. Dementiev (*Syst. Av. Ross.*, Paris, 1935, pp. 49-51); Dr. H. Friedmann and Mr. H. G. Deignan, and of L. Peters (cited above). The drawings of wings were executed by Mr. Lloyd Sandford. I tender them all my grateful thanks.

1. *Otus scops scops*.



Text-figure 1.

Otus scops scops. ♂ Lanusci, Sardinia, 2-I-1901. (Amer. Mus. Nat. Hist., New York.)

Strix scops Linnaeus. *Syst. Nat.*, ed. 10, 1, 1758, p. 92. (Europe, restricted to Italy.)

Distribution: Breeds in Central and Southern Europe, north to central France, northwestern Germany, the Alps, Austria, Hungary, southwestern Russia, the Canary Islands, North Africa. Winters in West Africa, east to Ethiopia and south to Uganda.

Wing Formula: 3rd primary longest, 2nd subequal; 1st primary long, equal to 6th, or between 5th and 6th, or 6th and 7th.

Dimensions of Wings: ♂ 147-161 mm. ♀ 148-166 mm.

Color Phases: Amount of gray and reddish-brown variable, producing gray and brown phases, but no clear red phase. The markings vary much in intensity.

2. *Otus scops cycladum*.

Pisorhina scops cycladum Tschusi. *Orn. Jahrb.*, 15, 1904, p. 21. (Naxos).

Distribution: Resident in the Cyclad Islands and Crete. (Not examined.)

3. *Otus scops pulchellus*.

Stryx pulchella Pallas. *Reise Versch. Prov. Russo. Reichs*, 1, 1808, p. 456. (Siberia.)

Distribution: Breeds in Russia, east of Longitude 35° East and north to Latitude 56°; Caucasus, southwestern Asia north to Irtysh, east to Krasnoyarsk, south to Kirghiz Steppe, Ferghana, Tabargatai and the Altai. Winters in the upper Nile Valley, southwestern Asia and northwest India.

Wing Formula: Same as in *Otus scops scops*.

Dimensions of Wings: ♂ 150-164 mm. ♀ 156-163 mm.

Color Phases: Very close to *Otus scops scops*, but brown phase almost absent; only a few specimens have a little more rufescent tinge than others. General color more grayish and more uniform, particularly on the upper parts. (See P. Dementiev, *Systema Avium Rossicarum*, Paris, 1935, pp. 49-51.)

4. *Otus scops turanicus*.

Pisorhina scops turanicus Loudon. *Orn. Monatsb.*, 13, 1905, p. 129. (Kara-Korum, Transcaspia).

Distribution: Transcaspia, Bukhara, northern Persia, Armenia?

Wing Formula: Like *Otus scops pulchellus*.

Dimensions of Wings: Similar to precedent.

Color Phases: According to Dementiev (*loc. cit.*). This form is lighter still than *pulchellus*; pattern very fine, but well marked with more white markings. The one specimen in the American Museum of Natural History, from Mt. Asilmadog, Transcaspia, answers well the above description. Spots and shades very clear on pale ground color.

5. *Otus scops cyprius*.

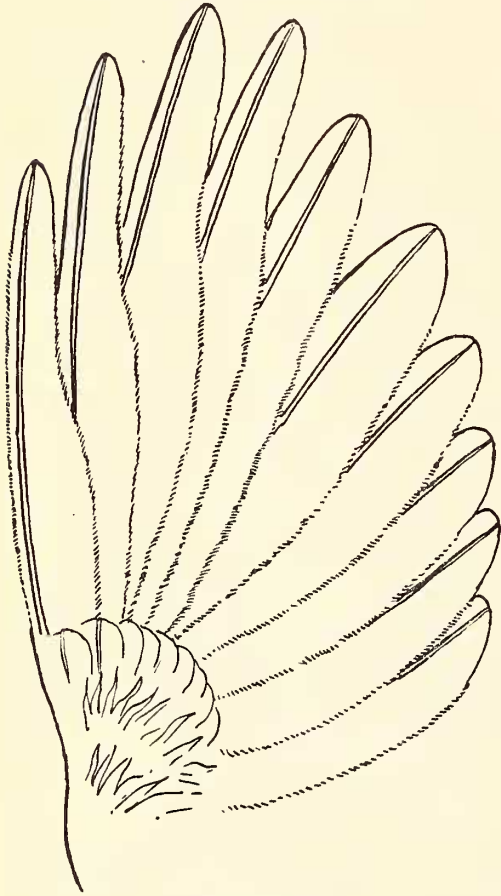
Scops cypria Madarasz. Termes, 24, 1901, p. 272. (Livadia, Cyprus.)

Distribution: Island of Cyprus. (Resident.)

Wing Formula: Same as in *Otus scops scops*.

Dimensions of Wings: ♂ 150–163 mm. ♀ 153–167 mm.

Color Phases: Gray phase only; markings very distinct and rather strongly resembling those of the gray phase of *Otus scops sunia* and *Otus scops senegalensis*.

6. *Otus scops stictonotus*.

Text-figure 2.

Otus scops stictonotus. ♀. Chingwangtao, Tchili, N. China, 14-IX-1913. (Mus. Comp. Zool., Cambridge, Mass.)

Scops stictonotus Sharpe. Cat. Birds Brit. Mus., 2, 1875, p. 54. (China).

Distribution: Breeds in Amurland, Ussuriland, great Chigan, Manchuria, down to central China. Winters in South China, Tonkin, Laos and Siam. Hainan?

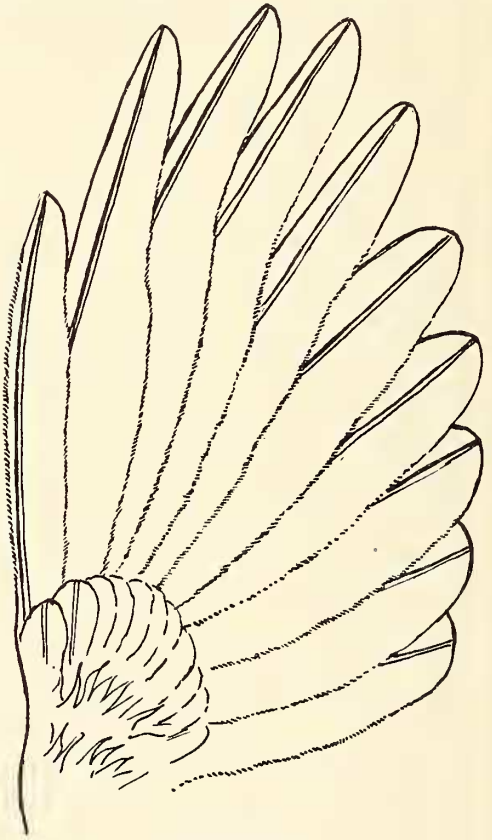
Wing Formula: In this form and in all the fol-

lowing ones, the first primary is much shorter and the wing more rounded than in the preceding five northwestern birds.

The formula is rather variable. In most of the specimens, the 1st primary is between 6th and 7th, but in others 1st equals 7th or 1st equals 6th, or 1st is between 7th and 8th. The 4th primary is the longest, but in a few cases, the 3rd is equal to it. The 2nd primary is equal to 5th, or between 5th and 6th. There are many variations as to the relative length of the different primaries.

Dimensions of wings: ♂ 137–152 mm. ♀ 137–154 mm.

Color Phases: Brownish-gray and bright red phases are found in this form with many intermediate plumages. More clearly marked than *Otus scops scops*, and generally darker and brown-



Text-figure 3.

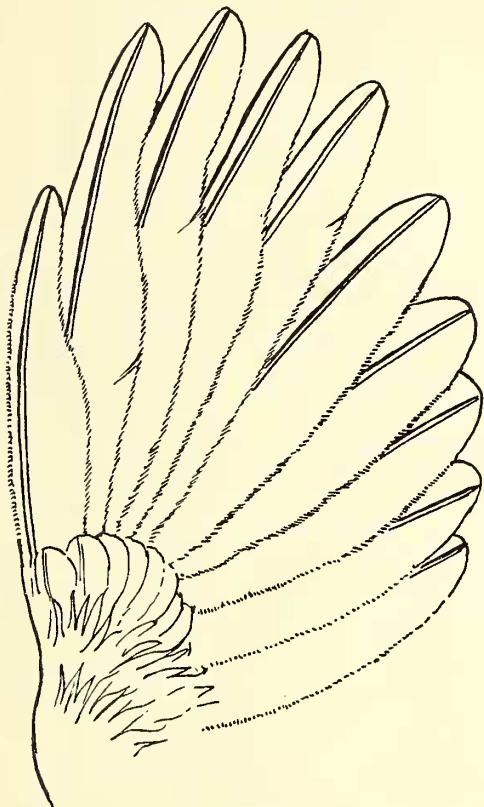
Otus scops stictonotus. ♀. Eastern Siberia, 16-IX-1900. (Amer. Mus. Nat. Hist., New York.)

er. Differs very slightly from the following form, *Otus scops japonicus*, having coarser and clearer marking below and in being a little more mottled above, with a rather clearer indication of a collar. But the two races are very close and only a series can show differences on an average. A few specimens are indistinguishable (about 10%).

All continental specimens, including some from

Tonkin, Laos and Siam, belong to this race. Two from Formosa, collected during the winter, seem to belong to *japonicus*. Two dark specimens from Siam, in the Academy of Natural Sciences of Philadelphia, mentioned by Friedmann & Deignan as intermediates between *malayanus* and *japonicus*, belong, in my opinion, to *stictonotus*. They have the whole tarsus feathered, unlike *malayanus*, and although dark, can be matched by several Chinese specimens. *Modestus* is confined to the Andaman and perhaps also the Nicobar Islands.

7. *Otus scops japonicus*.



Text-figure 4.

Otus scops japonicus. ♂. Toyoashi, Mikawa, Japan, 20-X-1922. (Mus. Comp. Zool., Cambridge, Mass.)

Otus scops japonicus Temminck & Schlegel. Fauna Jap., 1850, p. 27. (Japan.)

Distribution: Japan, from Hokkaido to Kiusiu. Formosa in winter?

Wing Formula: Same as in *Otus scops stictonotus*.

Dimensions of Wings: ♂ 143-146 mm. ♀ 142-151 mm.

Color Phases: Brown and red phases as in *stictonotus*. Less clearly marked below and more uniform above, but barely recognizable.

8. *Otus scops interpositus*.

Otus japonicus interpositus Kuroda. *B. O. C. Bull.*, 43, 1923, p. 122. (S. Borodino Island).

Distribution: Borodino Island. (Not examined.)

9. *Otus scops botelensis*.

Otus sunia botelensis Kuroda. *Tori*, 5, 1928, p. 26. (Botel Tobago.)

Distribution: Island of Botel Tobago. (Not examined.)

10. *Otus scops elegans*.

Ephialtes elegans Cassin. *Proc. Acad. Nat. Sci. Philadelphia*, 6, 1852, p. 185. (Off coast of Japan.)

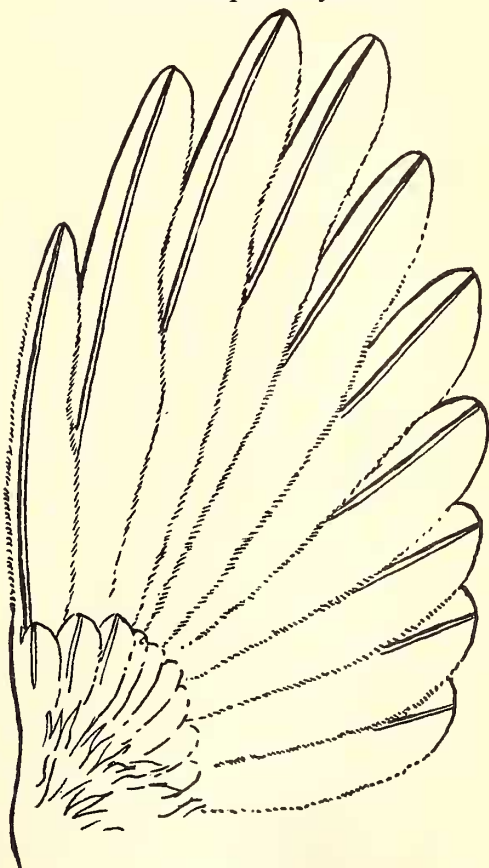
Distribution: Riu-Kiu Islands.

Wing Formula: As in *Otus scops stictonotus*. Same variations.

Dimensions of Wings: ♂ 160-170 mm. ♀ 163-167 mm. Very large size.

Color Phases: All specimens are in brown plumage; series very even. Resemble the brown phase of *Otus scops japonicus*. No red phase recorded.

11. *Otus scops malayanus*.



Text-figure 5.

Otus scops malayanus. ♀. Taiping, Perak, Malay States, 11-XI-1913. (Amer. Mus. Nat. Hist., New York.)

Scops malayanus Hay. *Madras Journ. Lit. Sci.*, 13, pt. 2, 1847, p. 147. (Malacca.)

Distribution: South China (breeding?) down to the Malay Peninsula, where it is probably a winter visitor. Range still uncertain. Specimens examined from Perak, November 1 (Malay P.), Sui-fu (Szechuan), Mongtse, October 12 (Yunnan) and Yenping, March 16 (Fokhien).

Wing Formula: Variable—usually 3rd and 4th primaries longest, equal or subequal; 1st between 6th and 7th, not differing from *Otus scops stictonotus* and others.

Dimensions of Wings: ♂ 135–150 mm. ♀ 146–150 mm.

Color Phases: Brown and bright red phases, but in all cases distinctly darker than *stictonotus*. Intensity of markings much the same, rather greater below. Lower quarter of tarsus naked.

12. *Otus scops modestus*.

Scops modestus Walden. *Ann. and Mag. Nat. Hist.*, (4), 13, 1874, p. 123. (Port Blair, S. Andaman Island.)

Distribution: Andaman Islands—Nicobar Islands?

Wing Formula: 4th primary the longest, but little longer than 3rd and 5th; 1st between 8th and 9th.

Dimensions of Wings: ♂ 143 mm. ♀ 140–142 mm.

Color Phases: Brown phase only; series (5) very even (collected at Port Blair in May, September and December). Above faintly spotted as in *Otus scops japonicus*; below more clearly marked, almost like *sunia*, with a good deal of white. Scapulars with pure white marks. Lower quarter of tarsus naked as in *Otus scops malayanus*. Andaman *Otus scops* are clearly different from Indo-Chinese, Burmese and S. Chinese specimens. They are less mottled above, and more below, and have the lower part of the tarsus unfeathered. The subspecific name *modestus* must be restricted to them. Nicobar birds (not examined) may be the same.

13. *Otus scops distans*.

Otus senegalensis distans Friedmann & Deignan. *Journ. Washington Acad. Sci.*, 20, p. 7, 15, July, 1939, p. 287. (Sala Metha, Chiangmai, N. Siam.)

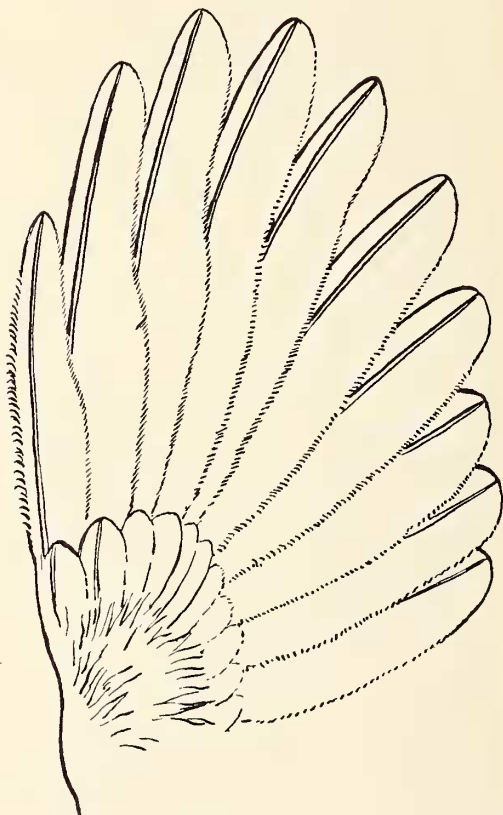
Distribution: Siam and S. Indo-China. (Resident.)

Wing Formula: 4th primary the longest; in the four known specimens, the wing formula varies:

1. (Type) ♀ Sala Metha, N. Siam, Feb. 20, 1936 (gray phase).

- 1st = 8th
- 2nd between 5th and 6th
- 3rd = 5th
- 4th slightly longer only

- 2. ♀ Pha Chang, S. Siam, March 20, 1927 (gray phase)
1st between 7th and 8th
2nd = 5th
3rd between 4th and 5th
- 3. ♂ Dalat. S. Annam, August, 1939 (gray phase)
1st between 8th and 9th
2nd between 5th and 6th
3rd and 5th subequal, 4th barely the longest
- 4. ? Finnon, S. Annam, November, 1939 (red phase)
1st between 9th and 10th
2nd between 7th and 8th
3rd = 5th
4th the longest

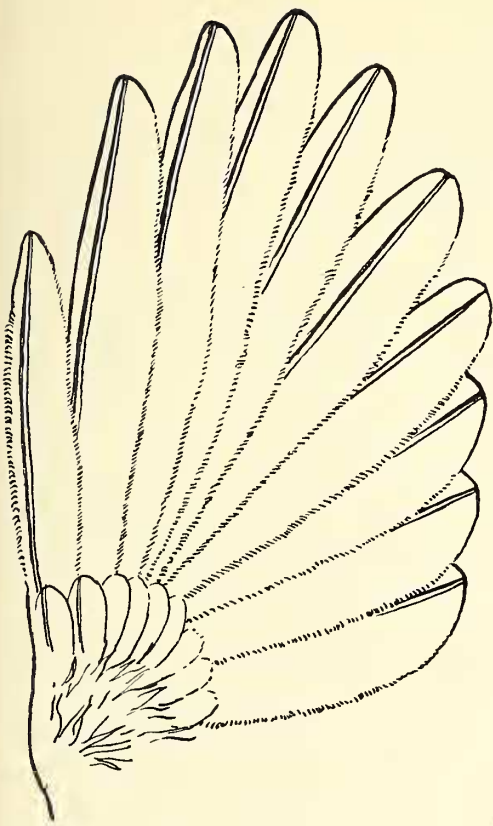


Text-figure 6.

Otus scops distans. Type. ♀. Sala Metha, N. Siam, 15-VII-1936. (U. S. Nat. Mus., Washington, D. C.)

Dimensions of Wings: ♂ 142 mm. ♀ 142 (type) and 127 mm. ?—128 mm.

Color Phases: Gray phase very similar to gray phase of *Otus scops hendersoni* from Angola, with very strong and clear markings and much white and gray above and below. Also near gray phase of *Otus scops sunia*, but still more mottled and



Text-figure 7.

Otus scops distans. ?. Finmon, S. Annam, XI-1939. (U. S. Nat. Mus., Washington, D. C.)

less brownish. Red phase very bright and close to the red phase of *sunia*, with stronger black marks above and more white and gray below.

14. *Otus scops sunia*.

Scops sunia Hodgson. As. Res. 1836, p. 175. (Nepal).

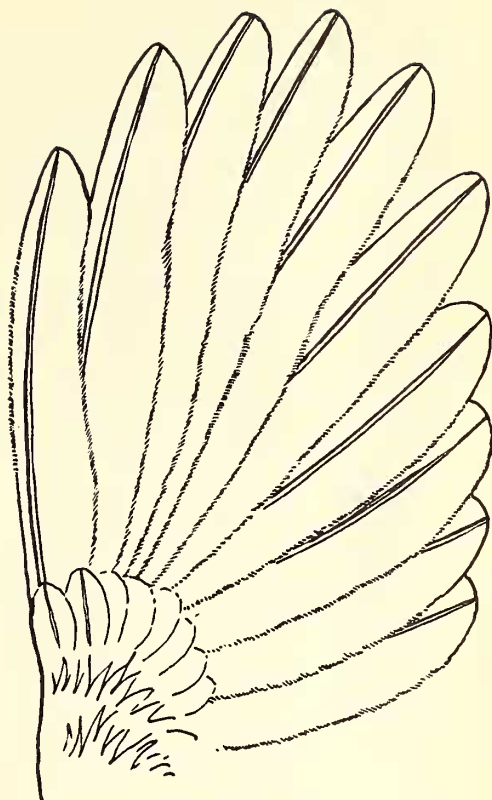
Distribution: Himalaya, from Kumaon to Upper Burma, Punjab, Central Provinces, Bengal, Assam and the greater part of Burma.

Specimens from Dalu in the Chin Hills (Burma) in the gray phase, and a series from Upper Assam, in the red phase, are inseparable from Himalayan specimens.

Wing Formula: 4th primary the longest; 1st usually between 7th and 8th, but formula very variable and sometimes 1st = 6th. In one Assamese bird, the 4th and 5th are equal, the 3rd is hardly longer than the 6th, and the 2nd is between 6th and 7th. In four others from the same locality, 3rd = 5th and 2nd = 5th.

Dimensions of Wings: ♂ 136-147 mm. ♀ 140-154 mm.

Color Phases: Very gray and very red phases, and some brown intermediates. Gray birds are



Text-figure 8.

Otus scops sunia. ♀. Upper Assam, India, 5-1-1903. (Amer. Mus. Nat. Hist., New York.)

strongly mottled above and much resemble some specimens of *Otus scops senegalensis*. All are strongly marked below and above with much white, but never so gray and white as *Otus scops distans*. The weakly marked gray birds resemble the more strongly marked *Otus scops scops* in color.

15. *Otus scops rufipennis*.

Otus rufipennis Sharpe. Cat. Birds B. M. 2, 1875, p. 60. (Eastern Ghats, Madras.)

Distribution: Indian Peninsula south from Bombay and Madras.

Wing Formula: "Similar to *Otus scops scops*," according to Baker, but in fact like *sunia*, with a short first primary.

Dimensions of Wings: "122-135 mm."

Color Phases: "Similar to *sunia*, but rather darker." (Stuart Baker.)

One ♂ specimen from Jagalled, Bombay Pr., in the Koeltz collection, is very near *pulchellus* in coloration, with more rufous on the wings.

16. *Otus scops leggei*.

Otus sunia leggei Ticehurst. *Ibis*, 1923, p. 242. (Kotmalie, Ceylon.)

Distribution: Ceylon. (Not examined.)

Wing Formula: "Similar to *Otus scops scops*." (Baker.) But more likely similar to *sunia*.

Dimensions: "119–127 mm."

Color Phases: "Differ from other races in being much smaller and darker." (Stuart Baker.)

17. *Otus scops senegalensis*.

Scops senegalensis Swainson. Birds W. Afr. 1, 1937, p. 127. (Senegal.)

Distribution: Northern west Africa, east to Egyptian Sudan, south to the border of the Congo. Not found in heavy forest areas.

Wing Formula: 1st primary = 6th, or between 6th and 7th, but usually between 7th and 8th; 3rd between 4th (the longest) and 5th; 2nd between 5th and 6th.

Dimensions of Wings: ♂ 123–136 mm. ♀ 130–138 mm.

Color Phases: Gray and brown phases, but no bright red phase in any of the Ethiopian Scops owls, which are all very closely related. Resembles much the similar phases of *Otus scops sunia*. Much individual variation in the intensity of markings. Some are very close in color to certain well marked *Otus scops scops*.

18. *Otus scops pygmeus*.

Scops pygmea C. L. Brehm. Vogelfag, 1855, p. 43. (Sennar.)

Distribution: Southern and eastern Egyptian Sudan and northern Abyssinia.

Wing Formula: Similar to *Otus scops senegalensis*.

Dimensions of Wings: ♂ 130 mm. ♀ 134 mm.

Color Phases: Hardly different from *Otus scops senegalensis*, but said to be rather more faintly marked, tending to *Otus scops scops*. Probably not valid, but comparative materials are insufficient to decide.

19. *Otus scops coecus*.

Otus senegalensis coecus Friedmann. Auk, 1929, p. 251. (Sadi Malka, Ethiopia.)

Distribution: Abyssinia, except northwestern, Somaliland and Kenya, south to north Guaso Nyiro River.

Wing Formula: Similar to *Otus scops senegalensis*.

Dimensions of Wings: ♂ 120–133 mm. ♀ 119–121 mm.

Color Phases: Gray and brown. Described as darker, more heavily vermiculated than any

other race, which is not borne out by some of the few specimens examined.

20. *Otus scops socotranus*.

Scops socotranus Ogilvie-Grant & Forbes. Bull. Liverpool Mus., 2, 1899, p. 2. (Socotra.)

Distribution: Socotra Island. (Not examined.)

21. *Otus scops pamelae*.

Otus senegalensis pamelae Bates. B. O. C. Bull., 57, 1937, p. 150. (Dailami, Arabia.)

Distribution: Arabia. (Not examined.)

22. *Otus scops ugandae*.

Pisorhina ugandae Neumann. Journ. Fr. Orn., 47, 1899, p. 56. (Kwa Mtessa, Uganda.)

Distribution: Upper Uelle east to Barh-el-Jebel, and south to Lake Kivu and Ankole.

Wing Formula: Similar to *Otus scops senegalensis*.

Dimensions of Wings: ♂ 131–143 mm. ♀ 135 mm.

Color Phases: As in *Otus scops senegalensis*, but less gray, with markings on breast more contrasted.

23. *Otus scops feae*.

Scops feae Salvadori. Mem. R. Ac. Sc. Torino, 53, 1903, p. 95. (Island of Anobon.)

Distribution: Island of Anobon (W. Africa). (Not examined.)

Color Phases: "Resembles *Otus scops senegalensis*, but darker in color. The black shaft-streaks of the underparts broader." (Bannerman.)

24. *Otus scops graueri*.

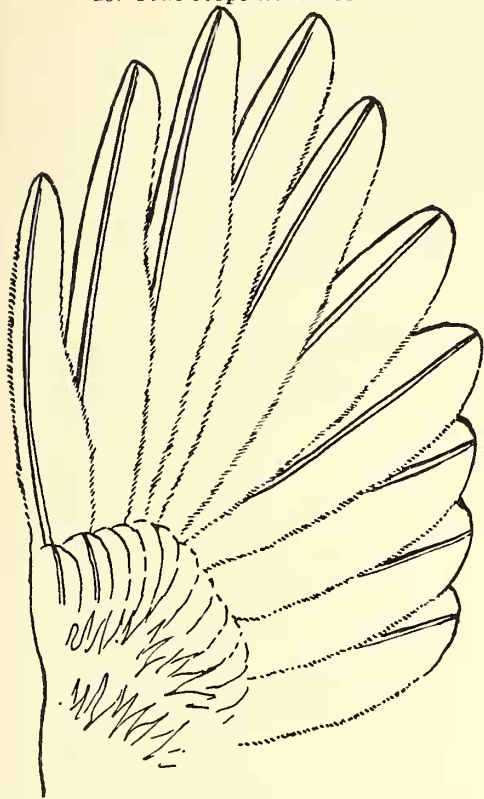
Otus senegalensis graueri Chapin. Am. Mus. Nov., 1, no. 412, 1903, p. 4. (Lueba, northwest shore of Lake Tanganyika.)

Distribution: Coast of Kenya, Tanganyika east to Katanga.

Wing Formula: Similar to *Otus scops senegalensis*.

Dimensions of Wings: ♂ 124–128 mm. ♀ 129–136 mm.

Color Phases: Differ slightly from *Otus scops ugandae* by "having the crown, back, rump and lesser wing coverts more heavily washed with rufous, while the rufous markings on the basal half of the breast-feathers are paler and less extensive." (Chapin.) Series are very even.

25. *Otus scops hendersoni*.

Text-figure 9.

Otus scops hendersoni. ♀. Bailundu, Angola, 19-VIII-1901. (Amer. Mus. Nat. Hist., New York.)

Ephialtes hendersoni Cassin. *Proc. Acad. Nat. Sci. Philadelphia*, 6, 1852, p. 186. (Off Novo Redondo, Angola.)

Distribution: Angola and southwestern Congo.

Wing Formula: Similar to *Otus scops senegalensis*.

Dimensions of Wings: ♂ 128-136 mm. ♀ 134-140 mm.

Color Phases: Often very gray and clearly mottled, and almost similar in color to gray *Otus scops distans* from southeastern Asia, but many specimens are also strongly washed with rufous.

26. *Otus scops pusillus*.

Pisorhina capensis pusilla Gunning & Roberts. *Ann. Transvaal Mus.*, 3, 1911, p. 111. (Nama-bieda, Portuguese East Africa.)

Distribution: Mozambique to borders of Nyasaland and S. Rhodesia. (Not examined.)

27. *Otus scops intermedius*.

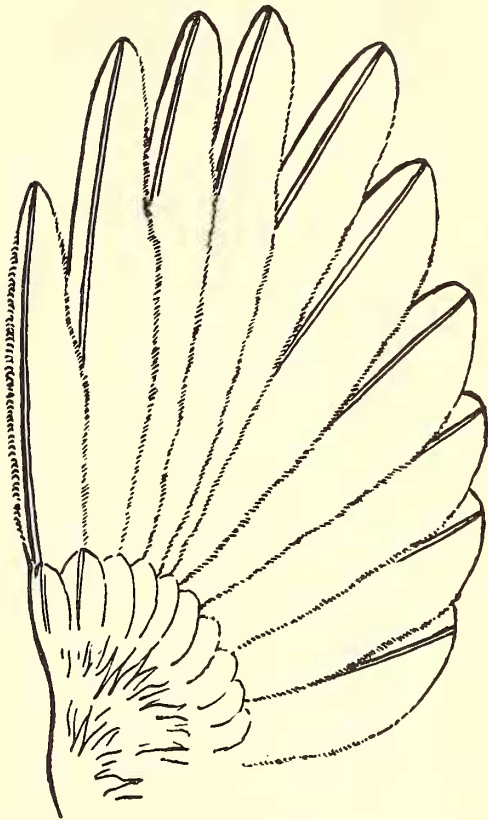
Pisorhina capensis intermedia Gunning & Roberts. *Ann. Transvaal Mus.*, 3, 1911, p. 111. (Pretoria.)

Distribution: South Africa, except the Cape Province. (Not examined.) Doubtfully valid. Probably synonym of *Otus scops latipennis* (= *capensis* auct.).

28. *Otus scops latipennis*.

Scops latipennis Kaup. *Jardine's Contr. Orn.*, 1852, p. 110. (Caffraria.)

Distribution: Cape Province. (Not examined.) "Tarsus not feathered down to the toes."

29. *Otus scops flammeolus*.

Text-figure 10.

Otus scops flammeolus. ♂. Sunnyside Canyon, Huachuco Mountains, Arizona, 4-V-1934.

Scops flammeola Kaup. *Jardine's Contr. Orn.*, 1852, p. 111. (Mexico.)

Distribution: Southern British Columbia, south through the mountains of western United States and Mexico, east to New Mexico.

Wing Formula: 1st primary between 7th and 8th, or between 6th and 7th, more usually = 8th; 4th longest or equal to 3rd; 2nd between 5th and 6th.

Dimensions of Wings: ♂ 128-138 mm. ♀ 129-144 mm.

Color Phases: In the gray phase, resembles

Otus scops sunia and *Otus scops senegalensis*. No bright red phase as in Asiatic Scops owls, but a brown rufescent one of variable intensity as in the African races. Always differs from all others in the variable russet coloration of the upper throat, top of the head, feathers around the eyes, egrets and facial disk. Under parts much like those of *distans* and *hendersoni*, very gray; upper parts less mottled, more like those of *sunia*.

30. *Otus scops rarus*.

Otus flammeolus rarus Griscom. *Auk*, 1937, p. 391. (Dueñas, Guatemala.)

Distribution: Highlands of Guatemala. (Not examined.) "Similar to *flammeolus*, but in the intermediate phase more brownish, less purely gray in ground color above; ochraceous longitudinal wing-bars richer and deeper, broken collar across hind neck tawnier and brighter, less brownish; most of the occiput bright tawny ochraceous rather than rusty brown; chestnut areas on side of head and auricular region rather brighter and more richly colored; brownish or rusty washing on underparts brighter and tawnier." (Griscom, *Ibis*, 1935, pp. 549-550.)